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Editorial Comment

Another
Successful
Meeting

The 1942 Annual Meeting of the American College of Chest Physicians was held at Atlantic City, June 6-8, and is now history. Despite war conditions and the difficulty of travel, there was a ten per cent increase in the Registration over our last meeting at Cleveland in 1941. Physicians registered from 34 states, the District of Columbia, Puerto Rico, and the following foreign countries: Argentina, Canada, Cuba and Mexico.

Elsewhere in this issue you will find listed the names of the physicians who successfully passed their entrance examinations and were admitted into the College as Fellows.

"Information Please" luncheon as usual was well attended. This event has grown more interesting each year and has certainly earned a permanent place for itself at our meetings.

The session which drew the largest attendance was the luncheon meeting held under the auspices of the Council on Military Affairs. Brigadier General Charles C. Hillman reported that the x-raying of all selectees was now one hundred per cent, since January 1, 1942—Commander Robert E. Duncan of the Naval Medical Center presented the latest statistics on the evaluation of the 35 mm. film as a case-finding agent—Dr. Herman E. Hilleboe, Surgeon in Charge of Tuberculosis Control of the United States Public Health Service, discussed the problem of tuberculosis control in connection with the war effort—Dr. Roy S. Wolford, Chief of Tuberculosis of the United States Veterans Administration, spoke on the tuberculosis problem as it now affects the Veterans Administration. Dr. Wolford in his discussion brought out the fact that there were approximately 900 new cases of tuberculosis admitted into the Veterans Hospitals since the Selective Service Act went into effect. These new cases were from the first group of selectees and National Guard, who did not have the benefit of x-ray examination upon induction. This in-

teresting session was brought to a close by Dr. Esmond R. Long, Chairman of the Sub-Committee on Tuberculosis of the National Research Council who discussed the relationship between the National Research Council and the various governmental medical services.

Another interesting session which attracted a large attendance was the joint meeting of the American Bronchoesophagological Association and the American College of Chest Physicians. Various phases of bronchoscopic aids in connection with diseases of the chest were presented by a group of bronchoscopists and internists.

One of the highlights of the meeting was the large delegation of physicians from the various Latin-American countries. The attendance of these doctors who traveled great distances to attend the meeting of the College this year vividly portrayed the close relationship between our Latin-American neighbors and the Fellows of the College in this country.

The luncheon meeting sponsored by the Council on Undergraduate Medical Education brought forth some interesting facts. Dr. A. J. Cohen who addressed this session gave an account of his early experiences in attempting to teach tuberculosis to the medical students in Philadelphia. The Fellows of the College realize that the task of this Council has been difficult but it is gratifying to know that the Council under the leadership of Dr. Ed W. Hayes has been making steady progress and that an improvement in the teaching of chest diseases in the medical schools has been noted each year.

Important resolutions concerning the College were adopted at the meeting and transcripts of same will be found in the Organization News columns of this journal.

The meeting closed with the Annual Smoker and Beefsteak Dinner which was capably arranged and conducted by Dr. James S. Edlin of New York City.

C. M. H.

The Diagnosis and Treatment of Chronic Perennial Asthmatics*

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The chronic perennial asthmatic is a very sick patient most of the time. He has frequently recurring attacks of invalidism and he may not respond readily to ordinary methods of treatment. Epinephrin, in any form, does not always relieve the attack; he may become epinephrine-fast, or epinephrine-sensitive. This patient can and does become an intractable case of bronchial asthma verging into status-asthmaticus.

Even when ambulatory, he may be cyanotic, often ashen-gray in appearance; he is constantly dyspneic on the slightest exertion; he has a weak, fast pulse, similar to that encountered in patients with chronic pulmonary tuberculosis. This type may occasionally be found in the young individual between the ages of six and twelve years, and in the elderly patient who does not begin to suffer until the age of 65 or 70 years.

The syndrome of bronchial asthma is due to various allergic factors; therefore, such a patient should have a thorough medical and allergic diagnosis. The important fact to be ascertained is the season of the year in which the initial attacks began. The patient may not readily remember this, since this very early phase may have taken place 10 or 15 years previously. Chronic perennial asthma results most frequently from:

- 1) Primary winter bronchitis of many years duration;
- 2) Seasonal pollen asthma;
- 3) A miscellaneous group of sensitivities such as inhalants, animal epidermals, foods, molds, house dust, and occupational contacts.

An analysis of 200 patients with chronic bronchial asthma under my care from 1925 to 1935 shows that:

85 patients (52.5%) began with mild attacks of winter bronchitis 5 to 20 years previously (Group 1);

55 patients (27.5%) developed subsequent

to seasonal hay-fever and pollen asthma (Group 2);

50 patients (25%) began as manifestations of sensitivity to the miscellaneous antigens (Group 3).

Group 1

Primary Asthmatic (or Chronic) Bronchitis:

Of the 85 in this current series who have started with winter bronchitis

15 developed perennial bronchial asthma in 1-5 years.

40 developed perennial bronchial asthma in 5-8 yrs.

10 developed perennial bronchial asthma in 8-10 yrs.

20 developed perennial bronchial asthma in 10-15 yrs.

At the onset, the attack of bronchitis was mild. It lasted from one to two weeks, followed by complete improvement. As the years went by, the attacks became more severe in character and longer in duration, at times associated with chills, fever, cough, and expectoration, and the beginning of wheezing. Attacks began to occur during the summer, and then the patient gradually became a chronic perennial asthmatic.

Upon testing for allergy, these patients show positive cutaneous reactions to house dust and to various bacterial proteins the most common of which are the *pneumococcus*, *influenza bacillus*, *staphylococcus* and *Friedlander bacillus*.

There is sufficient clinical evidence to indicate that the bacterial protein can produce two types of reaction in the human cellular organisms: first, that of an allergy; second, that of an infection.

The allergic response of cellular tissue does not alter the character and reactivity of that tissue no matter what antigen may be responsible for the asthmatic syndrome.

Once an inflammatory reaction has been set up, there is a gradual but definitely progressive destruction of mucous membrane and

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portions of immediately underlying substrata. When an individual is subject to recurrent attacks of bronchitis he not only has repeated allergic shocks due to bacterial protein, but also the mucosa of the respiratory tract undergoes some degree of cellular destruction. An uneven destruction occurs. Retention pools or pockets are formed; this lays the foundation for mucous plugs which obstruct the smaller bronchioles and interfere with the normal mechanics of respiratory interchange. These plugs are not usually completely dislodged, as indicated at autopsy. Any patient, therefore, suffering from prolonged attacks of bronchitis is a potential invalid because of the sequelae of chronic bronchitis and bronchiectasis.

It is often difficult to determine the presence or absence of a complicating bronchitis in the patient with asthma. We have found that the injection of a small quantity of epinephrine (one to three minims) will clear the chest within a few minutes just as long as the patient does not have a complicating bronchitis. In the presence of various forms of chronic bronchitis, the chest will remain full of rales, even though the patient feels relieved.

The description of the "textbook" attack of bronchial asthma actually portrays a patient whose attacks of coughing, dyspnea, and wheezing are the end-results of winter or chronic bronchitis associated with emphysema. Patients with bronchial asthma uncomplicated by chronic bronchitis do not have much cough or expectoration. Even after the most severe attack, the uncomplicated case is free of moisture in the chest and does not have inspissated mucus along the respiratory tract.

Simultaneously with the development of perennial bronchial asthma, therefore, a chronic inflammatory process is taking place, whether of the hypertrophic or atrophic variety. It may involve the entire mucosa of the respiratory system. This formation spells the recovery or invalidism of the patient. All those patients who have developed the atrophic catarrh are much more difficult to treat than those with the hypertrophic variety.

These patients may have a multitude of doubtful reactions. Most conspicuous positive reactions occur to the bacterial proteins representative of the respiratory tract. These

patients respond well to treatment with injections of three materials; in dilutions of 1:1, 1:10, and 1:100:

- 1) Autogenous vaccine;
- 2) House dust extract;
- 3) Stock bacterial protein (Parke, Davis and Co.).

To make the autogenous vaccine, a smear into culture in beef bouillon is made from each nasal fossa, from each tonsillar fossa, from the post-pharyngeal space, and from the sputum. These are made into a concentrated vaccine (3000 million per cc.) from the separate cultures. Autogenous vaccines may also include material obtained through bronchoscopic aspiration. It is important to realize that whatever the source, an autogenous vaccine can be expected to provide satisfactory material for treatment only when the patient shows a positive cutaneous reaction on testing for the organisms present herein.

House dust extract should be made from the dust of the patient's home or factory environment. Those patients who have a high degree of dust sensitivity are sometimes greatly benefited by treatment with "stock-pooled" extracts of house dust, and "stock-pooled" vaccines. These represent concentrated dust extracts remaining from those solutions used for patients who have been treated successfully. The pooled extract is sterilized by Mandler filtration. Routine tests for sterility are necessary. This type of extract, combined by simple mixture, invariably provides very beneficial end-results where indicated.

Group 2

Chronic Bronchial Asthma Complicating Seasonal Pollen Hay Fever or Asthma:

In the fifty-five patients of this current study it was found that

5 were sensitive to grass pollen at the onset;

10 were sensitive to ragweed pollen at the onset;

2 were sensitive to plantain pollen at the onset;

28 were sensitive to pollen of all seasons (trees, grasses, plantain and ragweed).

The time interval for the appearance of the bronchial asthma is as follows:

15 patients (27%) had asthma at the onset of their seasonal sensitivity but no clinical hay fever;

30 patients (54%) developed asthma after 1 to 8 years of seasonal hay fever symptoms;

10 patients (19%) developed asthma after ten years or more of symptoms of seasonal hay fever.

All patients who developed perennial bronchial asthma due to one or all of the seasonal pollination, irrespective of the season in which it started, sooner or later lost symptoms of hay fever. In some, the change was abrupt; in others it occurred over a period of years. The shock tissue of the eyes and nasal mucous membrane was lost and replaced by shock tissue within the bronchial system. This was complicated by changes within the mucous membrane resulting from infection. In a few years, the patient was a perennial bronchial asthmatic and in another few years the original cause of the pollen sensitivity was forgotten. Unless the physician will familiarize himself with the early developmental stages, he may miss this particular etiologic factor.

Group 3

Chronic Bronchial Asthma Complicating Miscellaneous Sensitivities:

Fifty patients among those studied were found to have multiple sensitivities. Prominent among inhalants were cat hair, horse dander, rabbit hair, kapok, orris root, pyrethrum, goat hair, and finger-wave lotion. There were no feather cases. Among the mold sensitivities were those to *Alternaria*, *Mucor*, and *Penicillium*. There were many multiple food sensitivities. Reaction to tests, *per se*, will not provide the maximum information. It is necessary to check foods by trial diet before identifying specific foods as etiologic factors. A three-day diet containing large quantities of the suspicious food factor will readily enable the physician and patient to know which of the positive reacting foods produce ill effects and which are then to be completely eliminated. Many foods, positive in cutaneous reaction, were only potential factors. It was never found that a food presenting a negative skin reaction would produce an attack; it was found that foods presenting positive skin reaction did not always produce an attack.

Certain foods, such as: citrus fruits and juices, starchy fermenting foods, radishes, onions, cabbage, cauliflower, and fatty and

fried foods can produce gastric discomfort, distension, and remotely dyspnea and asthma. These effects must be differentiated from an attack due to food allergy.

Treatment

It is most important to recognize the pre-clinical stages of asthmatic bronchitis. It is probable that at least eighty per cent of individuals with chronic perennial bronchial asthma could have been prevented from reaching such a stage of invalidism by proper and sufficient treatment. The study and treatment of these cases should include the following items:

1) Generally all patients should receive a complete and thorough physical examination. Foci of infection should be identified, evaluated and eliminated. Special attention should be given to gentle and conservative treatment of the nose and throat. The patient's mode of living is bound to suffer readjustment and sufficient instructions are needed.

2) The allergic testing should be followed by the exclusion of all positively reacting factors as indicated, and by a sufficient course of injections for desensitization where this treatment is required.

3) The acute phase, of course, can be relieved by epinephrine in small repeated doses, except, as often does occur in these patients, where such an individual is epinephrine-fast or -sensitive. The administration of Aminophyllin (10 to 20 cc. intravenously once or twice daily) with or without previous venesection (300 to 400 cc.) or venesection alone, may provide complete relief. Occasionally 250 cc. of saline, with 25 per cent glucose, and fortified with 10,000 units of thiamin chloride and 150 units of Ascorbic acid every two to three days may be indicated.

4) Special attention is to be paid to the possible sensitivity to any drug, manifested by these patients. Morphine, horse serum, aspirin, and any other drug may be used with impunity where no sensitivity exists.

5) Complete trust may be placed in this type of patient when he states that certain medicines and methods of treatment did not agree with him in the past. All such factors should be eliminated.

6) A dust-free (or pollen-free) room should be set up, including rubberized coverings to pillows and mattresses.

7) Bronchoscopic drainage is required in a certain number of cases wherein a mechanical obstruction exists.

8) Miscellaneous adjuvant methods such as x-ray and diathermy treatment to the chest and the administration of helium-oxygen mixtures are indicated in certain instances.

9) The single element of greatest importance is the elimination of sensitivity to the allergic antigen. Elimination of the offending protein is often sufficient; otherwise, a course of desensitization is required. A method recommended by various clinics in which injections are administered at weekly intervals has been shown to be unsuccessful in many cases. It is only logical to realize that if pollen were given once a week to a patient with high sensitivity, an increase in dosage would not be safely possible. Instead of any desensitization, the patient would invariably develop constitutional reactions. Therefore, injections, in the early period of desensitization, must be given almost every day, increasing the dosage drop by drop. By following this method, desensitization can be accomplished in the course of several months in about 95 per cent of patients with chronic perennial bronchial asthma. Once started, subsequent injections should not be given until local reactions from the last injection have

completely subsided.

Treatment with vaccines and house dust begins with a weak dilution, gradually and slowly increasing to stronger concentrations until 5 to 10 minims of the concentrates are used. (1:100, three times a week; 1:10, twice a week; and concentrates, once a week, or once in 10 to 14 days.) No matter how many extracts are used, they are given in different hypodermic syringes, and in different sites on the outer arm, so as to be able to judge the specific response to each. The degree of cutaneous reactions is the best guide as to the increase, maintenance, or decrease of future injection dosage.

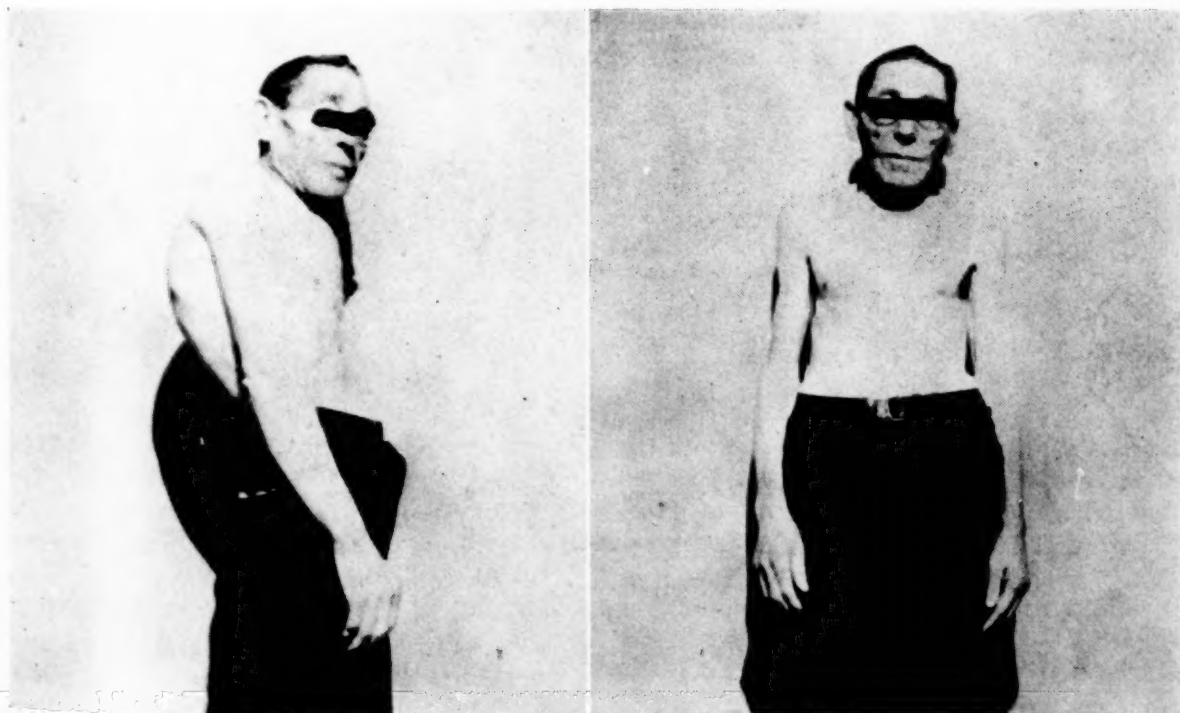
Summary

Analysis of two hundred patients with chronic perennial bronchial asthma indicates that it can be secondary to:

- 1) Primary winter bronchitis;
- 2) Seasonal pollen asthma;
- 3) Miscellaneous allergic etiologic factors.

Accurate diagnosis of the original exciting agent is essential in pursuing a course of proper treatment. A method of treatment for a patient with chronic perennial bronchitis includes:

- 1) Elimination of specific factors which provide a cause of hypersensitivity.



A Patient With Perennial Asthmatic Bronchitis of Twenty Years' Duration.

2) Treatment with

- (a) autogenous vaccine
- (b) stock special catarrhal vaccine
- (c) dust extract from specific environment. (P. D. Co.)

3) Therapy from a symptomatic viewpoint as it is indicated, taking special care to avoid measures and drugs to which the patient is sensitive.

Conclusion

Based upon experiences with two hundred patients with chronic perennial bronchial asthma, we have presented a method for evaluating the causative factors and a method for specific and general treatment. The necessity for special study in order to identify the etiologic agents, and the care required in specific desensitization, have been specially emphasized. 1737 Chestnut Street.

A Critique of Artificial Pneumothorax*

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Publication, by Riviere,¹ of his observations regarding artificial pneumothorax stimulated early studies in that method of collapse. Since that time, it has gained wide popularity and today probably constitutes the most commonly employed method of collapsing the lung in the treatment of tuberculosis. In recent years, the indications, to quote Barnwell,² "Have been widened rather than narrowed." In this increased application of pneumothorax there exists the possibility that over-enthusiasm may over-rule judgment in its administration. At this point, I would like to enter a plea for the patient. Choice of any method of treatment, whether bed rest or any form of collapse therapy, should be considered in the light of the nature of the disease present, the patient's reaction to the disease and the experience and judgment of the physician in deciding as to the best time to apply such method. In other words, the treatment must be individualized. As I see it, the physician, in deciding on pneumothorax, should be governed by the following general considerations:

1) Danger—Pneumothorax is a surgical procedure which is attended by certain dangers and complications, discussion of which is not within the limits of this paper.

2) Careful diagnosis—As to the degree of activity of disease and type of disease present, e.g., is it acute or fibroid in character or

progressive or stationary?

3) Consideration of the social, environmental and economic factors present. Here the cooperation of the patient is essential. Indications may be otherwise ideal but a poor result or failure may occur solely because of a non-cooperative attitude on the part of the patient.

In the doubtful case, it is the physician's responsibility to decide whether the benefit derived by application of the method, even with attendant risk, outweighs the disadvantages of withholding it because of conditions present in the individual case.

I shall limit this discussion to a consideration of pneumothorax, as applied to the caseous pneumonic or exudative type of tuberculosis and to certain conditions encountered within the thorax.

Criteria

In judging the success or failure of treatment, the following criteria are applicable:

- 1) Symptomatic and clinical changes:
 - a) Cough—Whether increasing or diminishing.
 - b) Expectoration—Character and amount in 24 hrs.
 - c) Temperature and pulse curve—Type and general trend to higher or lower.
 - d) Weight curve—Whether gain or loss gives a clue as to the status of the patient's appetite.
- 2) Laboratory procedures:

Change in bacterial content of sputum. Change in sedimentation rate.

* Read before a meeting of the American College of Chest Physicians and University of Oregon Medical School, Portland, Oregon, December 14, 1940.

**Medical Director, Oakhurst Sanatorium.

3) X-ray changes:

Comparable x-ray films at intervals are valuable.

Time does not permit a detailed discussion of these factors but it is obvious that the effectiveness of any method of treatment or collapse can be most accurately determined by the change in bacterial content of the sputum, i.e., improvement evidenced by a lessening in the number of bacilli and progression by an increase in the number of the organisms.

Limitations

Pneumonic or Exudative Type:

In this type caseation predominates. Cases tend to progress. Cavities, if present, tend to be punched out. Fibrosis is at a minimum. Individual cases, of course, vary in their severity. Pure caseation is rare. The degree of fibrosis determines the prognosis; the more fibrosis present the better the prognosis. Pneumothorax, if performed, may tend to spread or disseminate the disease either to the opposite lung or to other portions of the same lung. I am painting a rather gloomy picture of success of treatment in this type of case because my own experience has not been very satisfactory. I feel that where a lobe of a lung is involved or portions of an entire lung, a trial of bed rest is advisable for a period of two to three months, depending upon the severity of the symptoms. If, within that period of time, improvement has occurred and the x-ray has shown a tendency toward localization of disease, pneumothorax can safely be given a trial. If administered too early irreparable damage may be done.

Conditions encountered within the thorax:

Adhesions — Probably the greatest single cause of failure of pneumothorax therapy. If not too rigid and extensive, may separate or lengthen sufficiently to permit success of treatment. Too great traction on adhesions may predispose to the formation of effusions. Cases in which there are firm or rigid adhesions are also apt to have an accompanying chronic cavity. High intrapleural pressures in these cases may actually increase cough, causing dissemination to the opposite lung or even rupture of the adhesion with consequent production of an empyema, which is usually fatal.

Mobile or Movable Mediastinum—A frequent cause of failure in a case in which the other conditions would appear to be satisfactory. The more rigid the mediastinum, if other conditions are favorable, the better the prognosis of success of the pneumothorax. In practically every case, being treated by artificial pneumothorax, an expiratory shift towards the side of the untreated lung can be demonstrated. This is the greater, the more flexible the mediastinal septum. I recall one case in which, during the act of expiration, the cardiac apex actually shifted to the anterior axillary line or a distance of approximately 3 cm. In extreme cases, "mediastinal flutter" may develop. In this syndrome there is great circulatory and respiratory distress caused by extreme shifting of the vital structures during the act of respiration. One of the first indications that "mediastinal flutter" may develop is given on the x-ray film by the appearance of a rarefaction near the mediastinal margin where the pneumothorax has become so voluminous as to encroach upon the opposite hemithorax. This is the so-called "mediastinal hernia." Its appearance should always give warning to diminish the quantity of air at each pneumothorax refill. If the lung is allowed to re-expand sufficiently, the visceral and parietal layers may coalesce and then oleothorax may be attempted. Treatment of "mediastinal flutter" consists in abandonment of the pneumothorax, at least temporarily. Distress may be relieved by withdrawing 200 or 300 cc. of air, depending upon the size of the pleural cavity. Withdrawal of even smaller amounts may relieve the distress. If the condition of the patient is deemed satisfactory, collapse therapy may be abandoned altogether.

Advantages

Importance of Time Factor—Brief mention should be made of the importance of the time factor in treatment. In discussion with the patient, preparatory to administering artificial pneumothorax, I have frequently used the argument that, if successful, it might shorten the period of treatment. In many of these cases it subsequently has occurred that, due to unforeseen conditions encountered upon administration or to complications, treatment was actually not materially

shortened and the patient became disappointed. For this and other reasons it is probably best not to offer artificial pneumothorax as a substitute for bed rest but as an adjunct; to stress recovery rather than mere duration of time.

Among other advantages are the following:

As Compared With Bed Rest Alone—In the exudative case, bed rest should be instituted until localization occurs, when pneumothorax can be administered with greater safety. In other cases, pneumothorax may be attempted earlier if toxicity is not too great. If successful, pneumothorax assures a greater degree of healing and therefore a more permanent result. This constitutes the great advantage of this method over bed rest alone.

As Compared With Pneumothorax in Conjunction With Closed Intrapleural Pneumolysis—If adhesions are present and can be gradually stretched so as not to interfere with healing, pneumolysis may not have to be resorted to. In many cases it is surprising how much can be accomplished in the stretching of adhesions. If, on the other hand, adhesions are not too extensive and are favorably located and the sputum remains positive one should not hesitate to perform intrapleural

pneumolysis. Great harm can result from continuing a pneumothorax when adhesions are preventing a satisfactory result.

Summary and Conclusions

1) Before contemplating artificial pneumothorax the physician should carefully weigh all the factors making for probable success or failure.

2) Pneumothorax therapy in the exudative case should be preceded by a trial of bed rest of two to three months.

3) Mobile mediastinum accounts for failure of many cases of pneumothorax. In severe cases, withdrawal of the pneumothorax, in whole or in part, may be necessary.

4) Pneumothorax, if successful, offers the expectation of a more permanent result of treatment than bed rest alone.

5) If adhesions can be successfully stretched, closed intrapleural pneumolysis may not be necessary.

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The Treatment of Lung Abscess

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In common with many other conditions involving the lungs, the treatment of lung abscess has undergone radical changes in the past few years. The handling of cases with tuberculosis by surgery has contributed greatly to our knowledge of the mechanics and physiology of respiration and has given us more confidence in attempting surgical procedures on the lungs which in the past were considered extremely hazardous.

It is not intended to go into a lengthy discussion in this paper of the etiology or symptomatology of pulmonary suppuration. Some authors state that lung abscesses occur by aspiration of infected material by means of the bronchogenic route, while there are others who disagree with this and feel that the disease is embolic in origin. This author, however, is inclined to feel that the majority of

the abscesses we see occur by aspiration, and that a small minority are hematogenous in origin. An interesting question that has been brought up in connection with the two theories is, "if the aspiration theory is correct, why should so great many abscesses be found in the upper lobes?" An answer to this may lie in the fact that when a person is in the horizontal position, as while sleeping or lying on an operating table, the bronchi leading to the upper lobes are directed downwards, thus making it very easy for aspirated material to enter those lobes.

As for the bacteriology of this disease, almost any and every organism has been found in connection with lung abscesses. An important fact, though, is that approximately eighty per cent of all pulmonary abscesses contain anaerobic organisms and twenty per

cent contain aerobic organisms. This has been shown in the writings of Allen and Blackman,¹ Coryllos, Ornstein, Stern,⁵ Cutler,² and others. These facts, together with the evidence that anaerobic organisms are inhibited by the presence of oxygen, make a good argument in favor of open drainage.

Ten years ago many forms of collapse therapy such as phrenic nerve operations, pneumothorax and thoracoplasty were employed with enthusiasm. The opinion at present is that all of these procedures are not only of no value whatsoever, but are definitely contraindicated. The value of collapse treatment is undisputed in dealing with tuberculous cavities. Although in both conditions there is literally a "hole in the lung," the analogy goes no further. The cavity in tuberculosis is inhabited by an aerobic organism which will be inhibited with the shutting off of an oxygen supply by collapsing the lung. The various forms of collapse therapy, and particularly operations upon the phrenic nerve, have a tendency to lower the vital capacity and to inhibit the cough reflex. These results are particularly dangerous to any patient producing a large quantity of sputum, because of the difficulty he may have in emptying his bronchi, which might result in either a spread of the infection or the development of a bronchial obstruction. Pneumothorax has been tried and found to be of no use and exceedingly dangerous. In 1936, Clyde Allen and James Blackman¹ reported on twenty-six cases in which this procedure was tried. In five of these cases no collapse could be obtained because of adherent pleurae. In seventeen cases, a partial collapse was obtained which affected, for the most part, only the healthy portions of the lungs. Five cases of complicating empyemata occurred in this group. In only four cases was a satisfactory collapse obtained. One of these recovered, one was lost track of, and two died. Ten cases of this group went on to have surgical interference with only two deaths.

At the present time, there is still a great deal of discussion concerning the treatment of lung abscesses. One group advocates so-called conservative measures, while the other is in favor of surgical treatment. It might be recalled here that, in connection with tuberculosis, at one time the group who were

opposed to collapse treatment called themselves conservatives; but when the truth was out, it was the other group who was conserving the patients.

Before going any further let us all recognize one fact. We all know that some lung abscesses *heal spontaneously* without any special form of treatment. About fifteen to twenty per cent of all lung abscesses will do this. We also know that there is no manner of telling which case will fall into this group or into the much larger group in which progression of the disease occurs. And unless someone comes along with a form of treatment listing higher than twenty per cent cures, it will be hard for him to prove that some of his cases did not get well in spite of and not because of the treatment. We have to think of this when we talk about the use of bronchoscopy, chemotherapy, and the myriad of other proposed remedies. Another frequently forgotten point in connection with conservative therapy is the time it takes for a case to get well and resume his former occupation. Besides the physical disability connected with several months' prolonged treatment there is also a huge economic loss.

The medical procedures in the treatment of lung abscesses include postural drainage, bronchoscopic aspiration and irrigation, intravenous injections of arsphenamine and guaiacol, rectal instillations of ether in oil, and oral administrations of iodides, sulfanilamide, sulfapyridine, sulfathiazole and other drugs.

The accepted surgical treatment is open drainage by removing the ribs and unroofing the abscess cavity with the cautery. This is done by means of either a one-stage or two-stage procedure. The latter consists of removal of the ribs and packing to promote adhesions and later opening into the abscess cavity; the former consists of opening into the abscess all in one operation. The two-stage procedure is by far the safest and does not permit the possibility of a complicating empyema. It has been the custom of the author to operate all cases by the two-stage method. In the first stage, after removal of the ribs and intercostal bundles, iodoform packing is placed in contact with the parietal pleura and the wound is closed with interrupted sutures going through all layers. A rubber tissue drain is inserted to relieve the

pressure of the exudate that forms. By the third day the parietal and visceral pleurae will be found to be well adherent and the abscess then can be opened and unroofed by means of the actual cautery. Thus it can be seen that the time interval between the two stages is insignificant. Formerly the packing was left in place for from five to seven days before performing the second stage operation. It was later discovered that from thirty-six to forty-eight hours was sufficient for strong adhesions to form. The second stage is simple and requires for anesthesia only the local injection of novocaine to reopen the wound and remove the packing. There is no shock and no pain when the cautery is used. With this technique there is absolutely no danger of creating a complicating empyema, the occurrence of which would be disastrous. In fourteen of a series of eighteen cases, the author has been able to demonstrate the visceral pleura freely moving beneath the parietal layer indicating a possible danger if the one-stage technique should be used. This has been true even with abscesses having a duration of as long as twelve and fifteen months. The accuracy of previously interpreting adhesions between the pleurae by means of an x-ray film is hereby questioned. In none of this series of cases was there a resulting empyema. There were no cases of a persistent broncho-cutaneous fistula. This fact leads to what is believed an important point in the technique of performing the first stage. Long sections (about five inches) of three ribs are usually removed along with the intercostal bundles, thus producing *early mobilization* of a large surface of lung overlying the abscess. By so doing this, it is possible for the elastic lung tissue to contract completely around the cavity and close it without leaving a fistula. No sutures are used in the second stage of the operation. The wound is left wide open. The cut margins of the skin, subcutaneous tissue and muscle layers are protected with vaseline gauze and the abscess cavity is loosely packed with plain gauze. The dressing and packing are changed daily. When there is very considerable drainage the dressing is changed more often. It is of the utmost importance to carefully pack the wound daily in the later weeks otherwise the skin will close over before the abscess has shrunk sufficiently to

heal. Many individuals can be up and about within a week following drainage and can resume their occupations long before the wound is completely closed. In the above series, even with daily packing, it was not possible to keep the majority of the wounds open longer than an average of eight or nine weeks. Some closed in six weeks.

In the consideration of medical procedures, postural drainage is of definite help in removal of secretions and should be used in all cases. Bronchoscopy may help with establishing drainage but has no direct effect upon the abscess itself. The essential value of bronchoscopy is for diagnosis and not therapeutic purposes, except for the removal of foreign bodies or plugs. Pneumothorax is definitely contraindicated because of the danger of tearing pleural adhesions and producing an empyema. When a pneumothorax is instituted, a potential pleural space is converted into an actual one. Thus, if the disease should extend to the periphery of the lung, it could readily spill into the pleural cavity, there being no protection afforded by previously inflamed and adherent pleurae. Whatever successes achieved with any of the other methods alone, most likely have been due to spontaneous improvement rather than to the effects of the specific therapy.

Symptomatic improvement in the patient is a totally unreliable index of the ultimate prognosis. Remissions of temperature and recurrence of exacerbations are typical of the disease. The patient, in the majority of instances, will show a marked clinical improvement as soon as bronchial drainage is established. His temperature may return to normal and even his expectoration may decrease. However, unless the x-ray film shows a definite clearing of the process, he will have recurrences at later dates.

Milton B. Rosenblatt,⁴ in a recent excellent survey of seventy-two cases of lung abscesses treated medically at New York City Hospital, has presented the following statistics. Cured, four cases (five per cent); improved, three cases (four per cent); unimproved, thirty-one cases (forty-four per cent); dead, thirty-four cases (forty-seven per cent). In other words, nine per cent were cured or improved, and ninety-one per cent were unimproved or dead. In forming his statistics, he used these criteria:

1) Cured: No symptoms and no x-ray evidence of abscess.

2) Improved: No symptoms and x-ray evidence of retrogressive lesion.

3) Unimproved: Symptoms present or absent, but x-ray shows abscess to be stationary or progressive.

His statistics are not the only ones to show a poor prognosis for the conservative treatment of lung abscesses. F. T. Lord⁶ reported a seventy-five per cent mortality rate in ninety-seven cases. Allen and Blackman¹ reported twenty-five per cent dead in fifty-five cases; Cutler and Gross,² thirty-eight cases with twenty-eight per cent dead.

One must remember, though, that unless definite criteria for classifying the cases has been established, many erroneous discharge diagnoses will be made. Many of the cases discharged as improved from the hospitals, if followed up carefully, might be discovered as having died later on, elsewhere. A majority of the unimproved cases will swell the mortality statistics if they are followed up over a period of time.

In regard to the statistics following surgery, a summing up of the reports of Cutler and Gross,² Flick, Clerf, Funk and Farrell³ shows that out of one hundred and forty-eight surgically treated patients, sixty-two per cent recovered and thirty-eight per cent died. Here again the cases must be definitely classified in order to find the true picture. The figure thirty-eight per cent is not a true mortality rate for the "surgical treatment of lung abscesses." The techniques of thoracoplasty and thoracotomy were employed in these cases as well as drainage by pneumonostomy. Whenever any of the aforementioned techniques or lobectomy has been used, it means that the lung abscess has been complicated by an empyema, bronchiectasis or extension of the disease. This, in many instances, is due to improper handling of the case before it reaches the surgeon or to too long a period of waiting with conservative treatment. The mortality of simple abscess cases that are treated by cautery pneumonostomy early, before an empyema or bronchiectasis occurs, definitely should be less than ten per cent, and the cures in the neighborhood of ninety per cent. In the author's series of eighteen cases, all uncomplicated by empyema or bronchiectasis, and all treat-

ed by cautery pneumonostomy, there were seventeen complete recoveries and only one death. This occurred in a man sixty years old who had uncontrollable diabetes and a multilocular abscess that almost completely excavated his right upper lobe. He was almost in a state of asphyxiation from the huge quantity of sputum he was producing and was operated upon as an emergency. His condition alternated between threatening diabetic coma and insulin shock and he died three days after the operation. A post-mortem examination revealed eight small fresh abscesses, each about two centimeters in diameter, in both the right and left lower lobes, that were not present on an x-ray taken four days before death.

The discussion now comes to the point of what to do for a case with a lung abscess.

Instead of the medical treatment being set entirely apart from the surgical treatment, it is believed that the medical man and the surgeon should work in close cooperation with each other. All cases should be treated with early postural drainage. Bronchoscopy should be used as a diagnostic procedure and in those cases in which a foreign body is suspected. This is an important routine procedure, and will often avoid the distressing experience of opening into a lung abscess that is secondary to a bronchial carcinoma. The sputum should be cultured and in those cases in which there is a specific drug for the predominating organism present, it should be given along with the rest of the treatment. Then *early operation* and aeration of the abscess is the rational solution to the problem. It is probably needless to say but it will do no harm to mention the fact that all possible efforts should be expended in eliminating the tubercle bacillus as a cause of the cavity before any surgical drainage is attempted.

The question now arises as to when these patients should be operated upon. According to many authors, an observation period of six weeks was arbitrarily chosen because it usually comprised the acute phase of the disease. During that time there is an acute inflammatory pneumonitis with the lung breaking down and being expectorated, forming the cavity. Some cases break down earlier than this, however, and may within a short time become complicated with an empyema which very often means death to the patient. At

one time a case came to our attention of a girl twenty years old who developed a lung abscess one week following a tonsillectomy. She was treated conservatively and four weeks later the abscess spontaneously ruptured into the pleural space causing a virulent putrid empyema. A thoracotomy was performed but within a week she developed a pneumonitis in the contralateral lung and died. All these events occurred within six weeks following the tonsillectomy. As there is no definite yardstick to tell us which of these cases will get rapidly worse and which will get well spontaneously, it seems logical to make the statement that as soon as a definite abscess cavity can be demonstrated and localized on an x-ray film (by means of postero-anterior and direct lateral films), it should be opened and drained. One of the arguments advanced by those opposed to early surgery in the acute stage has been the possibility of a spread of the gangrene caused by early incision through acute pneumonic lung tissue. In reply to this, it can be stated that the author has encountered no instances of such an occurrence in any of his series of eighteen cases, eight of which were operated upon within four weeks from the onset of symptoms. Two of these cases had their operations thirteen and fifteen days after the beginning of the disease. It is quite possible that some of the reported instances in which a spread of the gangrene has occurred following operation were due not so much to the actual incision of the gangrenous tissue at operation but to hypoventilation of localized portions of the lungs and retained bronchial plugs of infected exudate. If this is so, extremely careful postoperative management with principal attention to hyperventilation, cough, postural drainage, limitation of narcotics, and possibly bronchoscopic removal of secretion would be the logical prophylaxis. Don't blame the actual surgery for spreads.

Summary

- 1) The majority of lung abscesses occur by means of aspiration through the bronchogenic route.
- 2) The anaerobic character of the infection in the majority of abscesses is emphasized.
- 3) Various forms of collapse treatment have been tried and found wanting and are definitely contraindicated.
- 4) Fifteen to twenty per cent of lung abscess cases do heal spontaneously but it is a serious offense to hold a case on so-called conservative treatment indefinitely because eighty to eighty-five per cent will get worse and after a time develop a bronchiectasis or an empyema which would require radical surgery or else permit no help at all.
- 5) Various medical procedures used in the treatment of lung abscesses have no definite therapeutic value except as an adjunct. Whatever improvement occurs with their use alone is probably the result of spontaneous healing.
- 6) A plea for definite standard criteria for the evaluation of statistics is made.
- 7) A brief mention is made of a personal series of eighteen cases with a mortality of one case.
- 8) In answer to the question, "How soon should we operate?", the statement is made: "As soon as a definite abscess cavity can be demonstrated and localized accurately, it should be opened and drained." No one questions the advisability of open drainage of a brain abscess, ischiorectal abscess, appendiceal abscess, or one on the finger or toe. Therefore, it is difficult to understand why one should make an exception to the long recognized treatment of localized pus, merely because it occurs in the lung.

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Diabetes Mellitus and Tuberculosis

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The fact that patients with diabetes mellitus easily acquire pulmonary tuberculosis is still true, despite the institution of insulin therapy.

Of the wide variety of infectious diseases that the diabetic patient must guard against, the most serious is tuberculosis. According to some statistics, pulmonary tuberculosis ranks second only to coma as a complication of diabetes. It has been found also that pulmonary tuberculosis frequently occurs in diabetic patients following hyperglycemic coma. Of 748 diabetic patients seen at Bellevue Hospital by Ralli and Steinberg,¹ 33 had active pulmonary tuberculosis, and in 29 of these the diabetes had preceded the tuberculosis. Himsworth² found 15 cases (6.5 per cent) of pulmonary tuberculosis in 230 consecutive diabetic patients seen by him. In 13 of these the diagnosis was made by x-ray examination. From this he concluded that every diabetic patient should have a routine x-ray examination of his chest when first seen by his physician.

It is believed by most observers that the reason for the diabetic patient's increased susceptibility to infectious diseases is his lowered resistance. Steinback, Klein and Desko-witz,³ in 1935, showed that following experimental removal of the pancreas, dogs lost their natural resistance to tuberculosis. For this reason it is felt that in the presence of diabetes, pulmonary tuberculosis shows special features. The exudative type of pulmonary tuberculosis is usually common in tuberculous diabetic patients. The lesions, pathologically, are large and confluent, and are infiltrations which tend to liquify extensively. This type of lesion is of uniformly bad prognostic import. The tuberculosis increases the severity of the diabetes and makes the latter disease more difficult to control. It was formerly thought that tuberculosis caused the death of no less than 40 to 50 per cent of diabetics, but extensive autopsy statistics have modified this figure to approximately 25 per cent.

Because of the liability of patients having a severe diabetes to develop tuberculosis, this complication should be kept in mind always. The possibility of this complication having occurred always should arouse the suspicion of the physician, when, for no obvious reason, a previously controlled diabetic patient requires larger doses of insulin, or begins to lose weight and fail in general health. This danger is present particularly in patients who have had diabetic coma, and also in diabetic children. All of these cases should be examined at regular intervals for the specific purpose of excluding tuberculosis. This should include a careful physical examination of the individual, with specific reference to the chest, an x-ray examination of the chest, and careful observation of the sputum for acid fast bacilli. With early diagnosis of the tuberculosis and efficient treatment of the diabetes, there is no reason to believe that diabetes will have any adverse effect on the tuberculous process.

Before the advent of insulin, only the mildest cases of diabetes complicated by tuberculosis offered any hope; but since the discovery of insulin we now can give the diabetic tuberculous patient the liberal diet which he requires. Such a diet may be very high in protein, carbohydrate, and fat, in the quantities and proportions that will maintain the best vigor, weight and resistance. The diet must be high in calories, often as much as 3500. The protein content of the diet may average between 70 to 90 grams. The carbohydrate factor can be as high as desired to get the best result, sometimes 300 to 400 grams being given without difficulty. The rest of the diet, of course, may be made up in fats. The diet may be given in more frequent feedings, dividing the total into five or six parts. Thus the patient can be given a higher caloric intake. The insulin should be given in whatever dosage may be required to keep the blood sugar as nearly normal as possible during the twenty-four hours. Sometimes it is necessary to use as much as 100 to 150 u. per day, and often it is more practical to divide this amount so that it can

* The Hamilton County Tuberculosis Hospital.

be given more frequently, say three to four times a day. Such a dosage is necessary in treating very ill patients, where only small amounts of food are taken frequently, and whose diabetic status is best evaluated by daily or hourly blood sugar determinations. In treating relatively normal individuals whose dietary intake is stable from day to day, the use of a daily morning dose of protamine insulin has been found most satisfactory.

The treatment of the tuberculous patient having diabetes should be the same as that of any non-diabetic tuberculous patient. Of course, bed rest is highly important and these individuals should be placed in a sanatorium if at all possible. This will afford better control of the tuberculosis and the diabetes, both from the standpoint of the patient and that of the physician. All forms of mechanical control of the tuberculosis can and should be used to their fullest extent. The institution of pneumothorax should be done when possible, and should afford no difficulties in the controlled diabetic. Crushing or section of the phrenic nerve can be done when necessary. These patients have been subjected even to thoracoplasty without detrimental results.

Except in extreme cases, it is not difficult to maintain a normal blood sugar level. Also, as tuberculosis improves clinically, less rigorous therapy of the diabetes is required, and must be modified in anticipation of hypoglycemic shock. For this reason, the internist and phthisiologist must cooperate closely in the management of tuberculous diabetics. Thus, under proper treatment, the prognosis is just as good in the cases having tuberculosis and diabetes, as it would be if the diseases were not associated.

Case I—W. I., colored male, aged 24, was followed in the Diabetic Clinic at Cincinnati General Hospital for two years before entering the Hamilton County Tuberculosis Hospital. He was first seen there on October 6, 1937, in diabetic coma and with a blood sugar of 422 mg. per cent and CO_2 combining power of 19 vol. per cent. The existence of diabetes was not previously known. He was admitted to the Cincinnati General Hospital, the diabetes was regulated, and he was discharged to be followed in the clinic. Regulation was not very well carried out at home for financial reasons. On May 16, 1939, he

was again admitted to the Cincinnati General Hospital in impending diabetic coma. At that admission, x-rays of his chest were made because of the history of fatigue, twenty pounds weight loss, weakness, pleuritic pain, cough, and hemoptysis, all within the previous two and one-half months. X-rays disclosed pneumonic infiltrate, especially in the left lung, with thickened pleura on the right side. The sputum was positive for acid fast organisms. The diabetes was again regulated with diet and insulin, and the patient was referred to the Hamilton County Tuberculosis Hospital on July 11, 1939.

The patient's tuberculous contact was with his mother, who died in this hospital in January, 1939, seven months before his admission here. The past history and marital history were non-contributory.

Course—On admission, the patient's diabetes was apparently under control, and remained so on a diet of C 240, P 100, F 120, plus 145 units of insulin daily. The blood sugar was below 175 mg. per cent except on three occasions. The x-ray diagnosis here was active, far advanced pulmonary tuberculosis, "pneumonic" type. Cavities were present in both upper lobes, with solid exudate in the lower lobes. The prognosis on the basis of the x-ray findings was considered grave. The patient developed a tuberculous laryngitis two months after admission. His downhill course was very rapid, and he expired on the 75th hospital day.

Case 2—E. W., colored female, aged 23, was admitted to the Cincinnati General Hospital on six occasions in diabetic coma before entering the Hamilton County Tuberculosis Hospital. She had been a known diabetic since September, 1936. On December 31, 1938, she was admitted to the Cincinnati General Hospital because of symptoms of fatigue, dyspnea, cough, and pain in the left chest. These symptoms began five months previously. She noted a 20-pound weight loss during that period. Because of persistent fever, chest x-rays were taken in December, 1938, and a diagnosis of possible tuberculosis was made. The sputum was not found positive until January 9, 1939. She was transferred to the Hamilton County Tuberculosis Hospital on February 18, 1939. Her diabetes was not controlled.

The family history was non-contributory.

The tuberculous contact was probably with a neighbor. The marital history was non-essential. In her past history it was noted that she had a long-standing P. I. D. with a subsequent arthritis, probably related.

Course—On admission here, the sputum was positive for acid fast organisms.

The diagnosis made on the admission x-ray was: "Pulmonary tuberculosis, far advanced, active, probably basal type, complicated by cavities, thickened pleura, and caseous broncho-pneumonia." The blood sugar on admission was 236 mg. per cent, and there was persistent glycosuria. She was put on a diet of P 85, F 110, C 220, and insulin units 45 daily. The insulin was gradually increased to 72 units daily before her diabetes was controlled, four months after admission. The pulmonary lesions showed extension with each routine x-ray, in spite of phrenemphraxis, done on February 23, 1939, on the left side. Pneumothorax treatment had been attempted on the left side but was unsuccessful. The course was further complicated by an acute otitis media, developing two and one-half months after admission. Her diabetes was completely uncontrolled for one month before her death, which occurred on the 276th hospital day.

Case 3—M. H., white female, aged 52, was admitted to the Hamilton County Tuberculosis Hospital on February 9, 1937, complaining of a cough of about two months duration. The onset was sudden, with generalized aching, fever, and occasional night sweats. She had no hemoptysis, dyspnea, or chest pain. The cough was productive of tenacious, yellow sputum. She lost about 30 pounds in weight during the two months illness. She had noticed increasing fatigue for five years.

Two weeks before coming to this hospital, she was sent by her physician to The Christ Hospital. X-rays taken there showed lesions in the right lung, and a diagnosis of diabetes was also made. She had had no symptoms of this latter condition, nor was she previously aware of its existence.

The family, marital, and past histories were non-contributory. The tuberculous contact was probably with a fellow office worker at her place of employment.

On admission to the Hamilton County Tuberculosis Hospital, x-rays disclosed lesions, probably pneumonic, in the first and second

interspace trunks of the right upper lobe, and in the apex of the right lower lobe. The diagnosis of tuberculosis was confirmed by a positive sputum. The blood sugar on admission was 247 mg. per cent with four plus urine sugar.

Course—Pneumothorax was started on the right side on February 22, 1937, and continued until May 30, 1938 (15 months). The sputum became negative as a result of the pneumothorax treatments, and remained so for two years, except on three examinations. For the first six months following the institution of pneumothorax treatment, the diabetes was well controlled. She developed a hydropneumothorax in June, 1937, and two months later her diabetes became worse. A diagnosis of empyema was made in July, 1939, and treatment with gomenol was instituted. With improvement of the empyema, the diabetes was again brought under control. She developed a broncho-pleural fistula, however, in October, 1939, so gomenol therapy was discontinued. Her tuberculous condition remained stationary with the diabetes under control until March, 1940, when, after re-expansion of her right lung, the pre-existing cavity reopened. Simultaneously, she began showing glycosuria. She was then prepared for thoracoplasty on the right side, this being done in three stages, from May 21 to July 19, 1940. The sputum became negative the next month and has continued so since then. The diabetes is now practically controlled with a diet of P 94, F 121, C 190, and crystalline insulin of about 30 units daily. She has been discharged from this hospital.

Conclusions

1) Pulmonary tuberculosis occurs two to three times as often in individuals with diabetes mellitus as it does in the general population, and the combination appears to be on the increase.

2) When the two diseases co-exist, the diabetes usually precedes the tuberculosis.

3) The exudative type of tuberculosis is usually common in the tuberculous diabetic.

4) Tuberculosis increases the severity of the diabetes and makes the latter disease more difficult to control.

5) Pulmonary tuberculosis frequently occurs in diabetic patients after coma.

6) Because of the susceptibility of the dia-

betic patients to tuberculosis, all persons having diabetes should be given an x-ray examination of the chest and frequent physical examinations of their lungs.

7) Tuberculous diabetic patients can safely be given insulin, and their diets should be given to the point of tolerance.

8) Well controlled tuberculous diabetic patients can withstand all forms of mechanical collapse therapy.

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Staphylococcus Empyema Sterilized With Sodium Sulfathiazole

Case Reports

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Both the grave prognosis associated with mixed infection tuberculous empyema and the prolonged treatment technique now employed have in two cases of staphylococcus empyema been greatly modified to the favorable side by the use of a sodium salt of sulfathiazole currently being used for intravenous medication.

Case I

White, male, age thirty-nine, gardener who gave a history of onset of his pulmonary tuberculosis twenty-six months previous to admission. He had received several months' sanatorium treatment, was classified as moderately advanced (A) reinfection type; and a left side artificial pneumothorax started on admission had been continued by private physicians. Early in the course of the pneumothorax spontaneous collapse occurred followed by mild temporary symptoms. Subsequently thoracoscopy was done. Five weeks previous to admission to this sanatorium pleural effusion developed in the pneumothorax space accompanied by all clinical signs of acute nontuberculous empyema. Two weeks later a pleurocutaneous fistula with considerable surrounding cellulitis developed at the fourth anterior interspace.

On our first observation the patient was emaciated, severely ill, unable to be out of bed. The fever was 102.2° F., pulse 118, res-

pirations 25. Physical examination and chest x-ray revealed a fifty per cent left side artificial pneumothorax with extensive pleuropulmonary adhesions and pleural effusion filling one-half the space. The right lung was normal. The pleurocutaneous fistula discharged an odorous pus and the surrounding zone showed a localized cellulitis. Other tuberculous complications did not exist.

The sputum amounted to 4 cc. in twenty-four hours, was mucopurulent and positive on plain smear for tubercle bacilli. Erythrocyte sedimentation rate, 30 mm. in one hour; red cells, 2,980,000; hemoglobin, 55 per cent; white cells, 18,000 with a moderate neutrophilia. Nephritis did not exist. Gentian violet instilled into the left pleural space was discharged through the pleurocutaneous fistula and not raised with the sputum. Pneumothorax pressures indicated that spontaneous pneumothorax did not exist. Bacteriological examination of the aspirated pus revealed staphylococcus aureus and tubercle bacilli.

Treatment—Complete aspiration of all pus and instillation of Azo-T (azochloramide 1:2000 and Sod. Tetradecyl sulphate 1:800) according to the technique of Palitz and Herman¹ was done for eight weeks. General improvement was prompt and excellent. The pleurocutaneous fistula healed, the fever re-

¹ Palitz, L., and Herman, M.: "Treatment of Tuberculous and Mixed Infection Empyema with New Irrigating Solutions," *Quarterly Bulletin of Sea View Hospital*, 6: 181-186 (Jan.) 1941.

* Valley View Sanatorium.

maintained normal and ten pounds of weight was gained. The fluid immediately became serofibrinous but staphylococci and tubercle bacilli appeared in every specimen and the fluid quantity or character did not improve after the first four weeks. On July 9, 1941, complete aspiration was done, followed by instillation of 100 cc. of a solution of 50 mgs. of sodium sulfathiazole monohydrate to 100 cc. of sterile distilled water. No symptoms arose and the quantity was raised to 250 cc. three times weekly. On July 14, 1941, culture of the fluid was negative for staphylococcus. A prompt reduction of fluid quantity and cellular content occurred. The fluid has now been free of staphylococci and tubercle bacilli for fourteen weeks following the last instillation of sulfathiazole. The pneumothorax has been continued under positive pressures, and sputum conversion has been effected. Slight serous effusion remains. The patient has now been discharged in excellent condition.

Case II

Male, age twenty-two, admitted to the sanatorium with a history of onset of his tuberculosis November, 1939. A diagnosis of moderately advanced (A) reinfection type was made. Cavitation was present in both lungs. Artificial pneumothorax was established, first on the right, then on the left side. Right side pneumonolysis was done May 28, 1940, followed by spontaneous pneumothorax and mixed infection empyema, staphylococcus aureus being the secondary invader. A ball valve fistula existed, so that continuous decompression was necessary and this resulted in a permanent pleurocutaneous fistula.

Aspiration and instillation of Azo-T and gentian violet was done over a period of several months with some improvement of clinical symptoms but no change of fluid quantity or character which was heavy pus in large quantities. The bronchopleural fistula opened at intervals and the pleurocutaneous fistula remained open. On July 18, 1940, 250 cc. of sodium sulfathiazole monohydrate solution was left in following complete aspiration. This was continued three times weekly for three weeks. On August 6, 1941, culture of the fluid was negative for staphylococcus.

Marked clinical improvement occurred; the

bronchopleural and pleurocutaneous fistulae both have been closed for fourteen weeks and the fluid is negative for staphylococcus on culture and tubercle bacilli on microscopic examination. A small quantity of serofibrinous fluid still forms. The pneumothorax is continued.

Both patients were given two grams of sulfathiazole by mouth each twenty-four hours for seven days beginning with the first pleural instillation. Blood serum concentrations were not taken.

Quantitative analysis for sulfathiazole was done on the chest fluid in each case at irregular intervals of forty-eight hours to eight weeks. The specimens were taken at the same time culture was made, it being considered that presence of the drug in appreciable quantities would inhibit bacterial growth, at least temporarily, so that false negative cultures might have been secured. Intervals of forty-eight hours usually revealed complete disappearance of the sulfathiazole.

The apparent success at permanent sterilization in these two instances led to the conclusion that the treatment may be of value and pH and sulfathiazole concentration determinations were made on two other cases so that a proper treatment interval could be estimated. A case of simple serous effusion with a duration of five months and without fistulae or pronounced pleural thickening was aspirated as nearly dry as possible and 200 cc. of a solution having a concentration of 100 mgms. per 100 cc. was left in. Sixty-three mgms. of sulfathiazole per 100 cc. was found in a specimen taken at the time of instillation, 22.8 mgms. at 4 hours, a trace at 20 hours, and none at 24 hours after instillation. The second case was a simple tuberculous empyema of 14 months duration, the pus being heavy and having a Gaffky IV count. Marked pleural thickening existed. The same quantity and strength of solution was used for instillation. Determinations showed 52.8 mgms. of sulfathiazole per 100 cc. at the time of instillation, 39.9 mgms. at 4 hours, 15.3 mgms. at 20 hours, 13 mgms. at 27 hours, and 12.5 mgms. at 44 hours after instillation. The pH determination was made in both cases at the same hours sulfathiazole determinations were made and were found to remain around 7.5. These findings would

indicate that periods between instillations should be no longer than 24 hours although 48 to 72 hour intervals were sufficiently short to sterilize the two cases reported.

More than one preparation of sodium sulfathiazole is on the market. They are all alkaline and may cause necrosis if injected into the tissues. For this reason neutral or slightly negative intrapleural pressures were left following each instillation in order that the solution would not be ejected through the needle puncture of the pleura. Dry sterilization of the sodium sulfathiazole monohydrate crystals before placing in solution with sterile distilled water prevents any change of chemical structure.

Summary

Sodium sulfathiazole monohydrate is a safe and effective means for sterilizing staphylococcus pleural empyema. One hundred mgs. per 100 cc. solution instilled at no longer than 24 hour intervals will be sufficient to accomplish this. Sufficient data has not been collected to indicate that simple tuberculous empyema can be likewise controlled.

By this means successful treatment of these cases will be simplified. When thoracoplasty is necessary to close a pneumothorax space, it can be done with the patient in good general condition and in the absence of an effusion. The small intermittently draining pleurocutaneous or bronchopleural fistulae can also be easily closed.

Educational and Occupational Therapy in Treatment of Tuberculosis*

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Educational and Occupational Therapy is a form of social treatment of Tuberculosis.

Educational Therapy may be defined as: An effort to teach the patient to understand his illness and its cause; to influence in the right direction his attitude toward himself, his mental and physical processes and his environment.

Occupational Therapy is a method of treating the sick or injured by means of instruction and employment in productive occupation. The recognized and officially accepted definition is: "Any mental or physical activity, definitely prescribed and guided for the specific purpose of contributing to and hastening the recovery from the effects of disease or injury."

In educational therapy we have one of the most important factors in the treatment of tuberculosis. Every patient on admission to a sanatorium can profit by good counsel. His getting well and his future after achieving health are both influenced by the program

of activity which he adopts when his treatment begins. Through the means of educational therapy he must at once be made treatment-conscious in order to successfully take the cure. The effectiveness of the treatment will depend largely on his cooperation and mental attitude. An intelligent attitude is therefore an important factor in the treatment. Certain attitudes are constructive and aid in the treatment, while other attitudes are destructive and interfere. Since attitudes are not always permanent they may be altered and directed.

One of the first steps in educational therapy is to give the new patient mental relief and a course of instruction in readjustment. The rules for recovery from tuberculosis must be learned and the routine of the institutional life acquired. The patient often enters the hospital with the problem of fear and bewilderment. The fear of permanent invalidism or even death in the place of assured living for years; worries over leaving family, wife, children or sweetheart; financial losses and debts; worries over the loss of a place in business and society; the sacrifice of hopes and plans, advancement and attained position; and, eventually, the problem of re-

* Post Graduate Course for Physicians in Diseases of the Chest at the University of Oregon Medical School. In cooperation with the Pacific Northwest Section of the American College of Chest Physicians, December 13 and 14, 1940, Portland, Oregon.

habilitation after recovery—all these factors tend to increase his mental disturbance. Adjustment to institutional life means a change from independence to dependence. It necessitates giving up chosen friends for those who happen to be on hand. Is it, therefore, any wonder that many patients enter the sanatorium in an upset, restless and bewildered frame of mind?

What can be done to make them mentally comfortable? Suitable lectures on tuberculosis can be given explaining the essential elements of the cause and development of the disease, also the object and mechanism of its treatment. This form of therapy may be given individually or in groups. Physical examinations should be repeated often and explained in detail. Reassurance and frequent explanations are important. The patients must be taught to face the facts. Many need someone to lean on until they can travel alone. Some need a firm hand and others gentle sympathy. Only by a careful study of their needs can successful educational therapy be administered.

Every sanatorium must, therefore, become a training and teaching center before we can successfully treat tuberculosis. In addition to readjustment and improved morale secured through educational therapy, an equally important role should be played by occupational therapy. Enforced idleness over a period of many months is disastrous to the morale of anyone, and particularly to one who realizes that he will some day be turned out into a competitive world with a physical handicap. Every practical assistance in education or training which may help the patient in later life adds to his security and aids in his recovery. "Learning while curing" has often rehabilitated patients that would otherwise have been destined to a completely dependent future.

The question arises, Who, then, is best qualified to assume the responsibility of rehabilitating the patients and where should it be done? The answer is self-evident: In a sanatorium and under the supervision of the medical staff. Prescribing the time, the nature of the work, and the manner of employment is a matter for the physician since he is best qualified to judge the physical capacity of the patient.

Firland Sanatorium, through its medical

and nursing staff, has worked out a course of training which has proven very effective. It was first established in 1912. Today, the "Firland System" includes a comprehensive program of educational and occupational therapy, which is administered by the medical and nursing faculty. Only registered nurses are employed; and when selected they are rigorously trained in the very specialized art of caring for the tuberculous patients. They also receive a course of Public Health Nursing. The personnel of the medical staff does not rotate. It includes men trained in all the specialties of medicine and surgery. Under this arrangement, the physician or surgeon can carefully study and follow his cases during their entire period of hospitalization, and has an opportunity to acquaint himself with all the problems essential to the welfare of the individual. Such is not the case in many charitable hospitals where the staff members serve only for a short period of time.

The Medical Director, by means of a personal interview, prepares each patient on admission to take the cure. This is Firland's first step in educational therapy. The patient is given a printed copy of twenty-one lessons of instruction. This booklet contains the disciplinary routine of institutional life and the rules for recovery. In addition to the lessons, each patient is equipped with a number of other pamphlets and tracts on such subjects as: "Service as Firland Sees It," "Advice to Patients," "Instruction Concerning Visitors" and "Learning While Curing." Additional therapy of similar nature is prescribed from time to time during the entire period of hospitalization. The little monthly magazine called *Pep* is an excellent educational medium. It is now one of the oldest sanatorium magazines and one of the few publications printed wholly by the tuberculosis patients. It is published primarily for the benefit of its employees.

Upon entering the Sanatorium, the patients are placed in a wheel chair and taken immediately to the ward. Each patient with active tuberculosis is put on absolute bed rest for a period of at least three months. Absolute bed rest means the type of rest prescribed for typhoid patients. Even though they may be free from toxic symptoms, they are not permitted to read or write for at

least a month. They are not allowed to arise from the reclining position except for meals and examinations. After one month of bed rest they are permitted to read, beginning with 15 minutes on the first day and increasing 10 minutes per day until one hour is reached. Writing privileges are granted for 10 minutes only on the first day and gradually increased up to an hour. While still in bed the patient may begin preparation for the time when he may take up regular training in certain occupational work which he has elected to follow when he leaves the sanatorium. Such work as drawing, leather tooling, sewing, the study of shorthand or other occupations are prescribed.

At the end of three months a favorable case may begin to sit up in bed. By a favorable case is meant one whose temperature has not been above 99° F. for men and 99.6° F. for women at any time of the day for the week ending the 90-day period. The pulse must not have exceeded 90 for men and 96 for women after a 30-minute rest period. Slight exertion should not produce severe cough or dyspnea. Advanced cases with extensive lesions and marked cyanosis require more than the initial 90-day rest period.

Those patients who have passed the first three months observation satisfactorily are permitted to begin sitting up in bed. On the first day 15 minutes is allowed and this time is increased at the rate of 5 minutes per day up to one hour. They are then allowed the reclining chair in the open. The "time-up" is increased at the rate of 10 minutes per day until 2 hours is reached. Bathroom privileges and permission to walk to and from the reclining chair are added to the schedule. "Time-up" and exercise are gradually stepped up until the patient has 6 hours up. He then receives his clothes and is assigned an easy hospital job. Light work is first prescribed, later more strenuous occupation. These jobs consist of such work as pushing tray wagons and food carts before and after meals, scraping dishes, and other light assignments. If improvement is shown under this exercise, the work is increased and more difficult assignments are given. It is understood, of course, during the above gradual steps in "time-up" and exercise, that the patient remains a "favorable case" with regard to temperature, pulse, weight and general condition.

When the eight-hour schedule has been reached the patient appears at a "work-sheet" conference which is presided over by members of the medical staff with the assistance of the Occupational Director. The patient is given an assignment slip which he is to fill out daily. Every hour of work, recreation and rest is accounted for. In order to evaluate properly the amount of energy expended it has been found practical to calculate all activity in terms of hour-miles. The idea of using miles as a basis for measuring all activity developed from the early treatment of tuberculosis. Walking was the first type of exercise prescribed. Experience proved that walking on the level at the rate of two miles per hour was the best upper limit of exertion. Walks could be increased in distance but the optimum rate remained at two miles per hour. To date, no other method of measurement has proved as useful as the hour-mile standard.

Every two weeks the staff doctor conducts a work sheet conference with all patients having eight or more hours up. A check is made on the temperature, pulse, weight and general health. The patient's record of activity for this period is reviewed and new assignments made. In this way the patient's response to prescribed activity is always under careful supervision.

For example, take the case of an imaginary patient John Doe. His work-sheet shows the following distribution of time for his guidance: Occupational Therapy Department, 2 hours; a hospital job, $\frac{1}{2}$ hour; recreation, 2 hours; walking, $\frac{1}{2}$ hour; necessary activity such as walking to and from meals, eating, making beds, taking baths, examinations and the like, 3 hours; the one remaining hour for chair rest—a total of 9 hours up and 15 hours in bed.

One of the most gratifying features of occupational therapy is the patient's reaction and response. With enthusiasm he anticipates the opportunity placed before him to gain actual experience in a vocation suited to his ability and individual temperament. His mental attitude improves, and his physical condition as well. When he makes application to the occupational therapy shops he has over 30 branches of training and education to choose from. Courses of instruction are offered in the following subjects: printing,

mechanical arts, radio, photography, domestic arts, shorthand and typing, barber and beauty culture, arts crafts, gardening, library work, college and high school courses, clerical work and many others.

Incentives for better work and health are ever before the patient. Pay positions are offered, such as heads of various departments, janitor work, store keeper and similar jobs. These serve a definite purpose in the educative and hardening process preparatory to leaving the sanatorium. The Occupational Therapy Department is at present financially self-sustaining.

No patient is allowed a town leave until he has reached eight hours up and is holding down one of the sanatorium jobs which consist of work usually done by orderlies. This sort of treatment is planned to arouse interest, prevent introspection and keep the

patient occupied. Regardless of the patient's wishes, it has been found advisable to keep him employed. If real pleasure and interest are not found in his assignment, an attempt is made to find the thing necessary to arouse his interest.

Every patient who has reached the goal of having eight hours "time-up" whether he remains at the sanatorium or if he goes home, automatically becomes a member of the Health Graduates Organization. Through the work of this group, which numbers several hundred, the gospel of tuberculosis healing at Firland is promoted. One of the important functions of the organization is its After-Care Committee which has assisted many of the discharged patients with their vocational adjustment.

The stay at Firland has given the patient a new slant on life, a new outlook and an

FIRLAND SANATORIUM—PATIENTS ASSIGNMENT

Name—JOHN DOE						Ward—E				Age—26 Years		
Hours of Activity									Hours of Rest			
Date	Hours Up	Ed. T. (x2)	O. T. (x2)	Job (x2)	Study Hr. (x1)	Recreation (x1)	Walk (x2)	N. A. (x2)	Total Miles	Bed Rest	Chair Rest	Total Rest
Dec. 1	9	0	2	½	1 hr. bed	2	½	3	15	15	1	16

Firland Sanatorium REST AND EXERCISE

The Sanatorium is not a hotel. It is a school and hospital for the education and treatment of the people with tuberculosis.

Sanatorium life means supervised (directed) life.

Only two things to do: Rest and Exercise. At first only Rest.

All exercise should be followed by rest.

Only two kinds of Rest: Bed Rest and reclining Chair Rest.

Bed Rest is ordered by the Doctor, except Rest Hour daily which is routine.

All exercise must be taken easily—walks should be on the level and not faster than two miles an hour unless so ordered by the Doctor. Recreation is exercise; it includes movies, cards, gardening, talking, reading, etc. Necessary activity should never exceed the point of real need. It includes dressing, walking to and from meals, making beds, examinations, treatment, etc.

Temperature must not be over 99° men, 99.6° women; and pulse not over 90 men and 96 women at any time of the day for several days before exercise is ordered.

If temperature and pulse go above these points (after 30 minutes of rest) more rest—perhaps best rest is indicated.

The patient who cheats, cheats himself and may lead others astray.

improved vision of health and happiness. He has learned the importance of safeguarding his health and the health of those around him. All this he has been taught, and again he can stand upon his own feet and face the world. On leaving, he is advised to go back to his doctor or clinic for regular examinations and further supervision. A little pamphlet entitled, "Coming Home From Firland" directs his course.

Conclusion

It is difficult to separate the medical and social treatment in tuberculosis because the

effectiveness of any social measure is usually limited by the physical condition of the patient. Adequate medical care is therefore essential for successful educational and occupational therapy. However, the medical treatment has far outstripped its equally significant social aspect.

Bushnell has said: "The care of tuberculosis is not medicine, but a mode of life."

In no human disease is the recognition of its social character more essential than in the instance of tuberculosis.

Seattle Medical Center

Organization News

The following notes have been abstracted from the proceedings of the Eighth Annual Meeting of the College held at Atlantic City, June 6-8. Additional notes on the meeting will be published in future issues of the journal as space permits.

NEW BY-LAWS ADOPTED

The new by-laws as recommended by the Committee on Revision of the Constitution and By-Laws were unanimously adopted at the annual meeting of the American College of Chest Physicians meeting at Atlantic City on June 6, 1942. The by-laws had previously been voted upon by the Board of Regents of the College meeting in annual session and the recommendations of the Committee for the Revision of the Constitution and By-Laws were endorsed. A resolution authorizing the Executive Council of the College to take the necessary steps for the incorporating of the College under the laws of the State of Illinois was also unanimously adopted by the members of the College at the annual meeting. A copy of the new by-laws as finally adopted by the College will be published in the annual directory of the College to be released during the next several months.

EXECUTIVE COUNCIL ESTABLISHED

In conformity with the by-laws adopted at the annual meeting of the College at Atlantic City, the following Fellows of the College will

comprise the Executive Council:

Dr. J. Winthrop Peabody, Washington, D. C.; Dr. Jay Arthur Myers, Minneapolis, Minnesota; Dr. George G. Ornstein, New York City; Dr. Richard H. Overholt, Brookline, Massachusetts; Dr. Joseph C. Placak, Cleveland, Ohio; Dr. Paul H. Holinger, Chicago, Illinois; and Dr. Chas. M. Hendricks, El Paso, Texas.

The Executive Council was authorized by the Board of Regents to complete the arrangements for the incorporation of the College under the laws of the State of Illinois and in accordance with the by-laws adopted by the members at the Convention in annual session.

NEW OFFICERS

President, Dr. Winthrop Peabody, Washington, D. C.

President-Elect, Dr. Jay Arthur Myers, Minneapolis, Minnesota.

First Vice-President, Dr. George G. Ornstein, New York, New York.

Second Vice-President, Dr. Richard H. Overholt, Brookline, Massachusetts.

Secretary-Treasurer, Dr. Paul H. Holinger,
Chicago, Illinois.

Regents

District No. 3, Dr. C. Howard Marcy, Pittsburg, Pa.*

District No. 4, Dr. Karl Schaffle, Asheville, North Carolina.

District No. 5, Dr. Louis Mark, Columbus, Ohio.**

District No. 6, Dr. James H. Stygall, Indianapolis, Indiana.

District No. 9, Dr. Paul A. Turner, Louisville, Kentucky.

District No. 10, Dr. George G. Gilbert, Colorado Springs, Colo.*

District No. 11, Dr. Charles M. Hendricks, El Paso, Texas.

District No. 15, Dr. Antonio Navarrete, Havana, Cuba.*

District No. 16, Dr. Gumersindo Sayago, Cordoba, Argentina.

District No. 17, Dr. Donato G. Alarcon, Mexico City, Mexico.

Governors

Alabama, Dr. L. O. Davenport, Birmingham.*

California, Dr. John G. Sharp, Salinas.

Connecticut, Dr. Lyman R. Morse, Hartford.

Georgia, Dr. James A. Redfern, Albany.

Illinois, Dr. Robert K. Campbell, Springfield.*

Indiana, Dr. Jerome V. Pace, New Albany.

Kentucky, Dr. Benjamin L. Brock, Waverly Hills.

Louisiana, Dr. Louis A. Monte, New Orleans.*

Massachusetts, Dr. Frank H. Washburn, Holden.*

Minnesota, Dr. G. A. Hedberg, Nopeming.

Mississippi, Dr. John C. Harter, Sanatorium.

Missouri, Dr. Herbert L. Mantz, Kansas City.

New Jersey, Dr. Marcus W. Newcomb, Browns Mills.*

New York, Dr. Nelsom W. Stroh, Buffalo.

Ohio, Dr. John H. Skavlem, Cincinnati.**

Tennessee, Dr. Raymond R. Crowe, Nashville.

Utah, Dr. William C. Walker, Salt Lake City.

Vermont, Dr. Roscoe E. Avery, Barre.*

Wisconsin, Dr. Karl O. Shaeffer, Racine.

Wyoming, Dr. H. R. Kanable, Basin.

Alaska, Dr. A. H. Johnson, Kodiak.*

Hawaii, Dr. Wm. F. Leslie, Honolulu.*

Philippine Islands, Dr. Miguel Canizares, Manila.*

Puerto Rico, Dr. Jacob Smith, Rio Piedras.*

U. S. Army, Brig. General S. U. Marietta, Washington.*

U. S. Navy, Commander Robert E. Duncan, Washington.*

Argentina, Dr. Raul F. Vaccarezza, Buenos Aires.

Australia, Dr. John H. Blackburn, Queensland.*

Brazil, Dr. Alfonso Mac-Dowell, Rio de Janeiro.

Canada, Dr. William E. Ogden, Toronto.*

China, Dr. Shu-Fan Li, Hong Kong.*

Cuba, Dr. Octavio Rivero, Havana.*

Ecuador, Dr. Juan T. Marengo, Guayaquil.*

India, Dr. Jaharlal Ghosh, Calcutta.*

Norway, Dr. Carl B. Semb, Oslo.*

Peru, Dr. Ovidio Garcia-Rosell, Lima.

South Africa, Dr. David Pieter Marais, Cape-town.*

*Re-elected.

**Appointed.

NEW CHAIRMAN, BOARD OF REGENTS

Dr. Joseph C. Placak, Cleveland, Ohio, formerly Regent of District No. 5, was unanimously elected as Chairman of the Board of Regents of the College. Dr. Placak had previously served as Governor of the College for the state of Ohio, and was Chairman of the Arrangements Committee for the Seventh Annual Session of the College held in Cleveland in 1941.

HISTORIAN ELECTED

Dr. Champ H. Holmes, Atlanta, Georgia, past president of the American College of Chest Physicians, was unanimously elected as the Historian of the College by the Board of Regents meeting in annual session at Atlantic City, June 8, 1942.

CHAIRMAN OF THE HOUSE OF GOVERNORS

Dr. William A. Hudson, Detroit, Michigan, was elected Chairman of the House of Governors at the annual meeting of the House of Governors held at Atlantic City, June 8th. Dr. Hudson was last year elected as the Governor of the College for the State of Michigan and through his efforts a progressive Chapter of the College has been organized in that state. Dr. Hudson presented before a joint meeting of the House of Governors and the officers of the State and District Chapters of the College a plan concerning post-graduate work in diseases of the chest, particularly applicable to the Associate Fellows of the College. Following an interesting discussion, the following resolution was adopted by the assembly; **RESOLVED:** "that this meeting recommend to the Board of Regents of the College that each State Chapter carry on such a program as Dr. Hudson has suggested or some modification of it, if the exact program is not possible to be carried on." Copies of the resolution were mailed to the executive offices of the College and it will be presented for discussion to the Board of Regents at their next regular meeting.

NOMINATING COMMITTEE

In compliance with the provision in the new by-laws adopted at the Atlantic City meeting of the College, the Nominating Committee is now comprised of three members of the College. Two of the members are elective and one is by appointment. The Board of Regents and the House of Governors each are required to elect a member from their respective bodies for the Nominating Committee and the third member is appointed by the President from among the membership at large. Members of the College elected and appointed to serve on the Nominating Committee must be present at the annual meeting of the College at the time of their election or appointment.

Dr. E. W. Hayes, Monrovia, California, was elected to serve on the Nominating Committee by the members of the Board of Regents; Dr. Robert K. Campbell, Springfield, Illinois, was elected by the members of the House of

Governors; and Dr. Francis J. Welch, Portland, Maine, Fellow at Large, was appointed by the President of the College. The members of the Nominating Committee met immediately following their election and appointment and they elected Dr. E. W. Hayes as their chairman. Recommendations for the nomination of officers for next year should be sent to the chairman of the Nominating Committee.

NEW FELLOWS ADMITTED BY EXAMINATION

Physicians who successfully passed the examinations held at Atlantic City, June 5, and were admitted as Fellows of the College at the Convocation Exercises on June 7 are listed below. Dr. J. Winthrop Peabody, Washington, D. C., President of the College, delivered the Convocation address. He was introduced by Dr. Joseph C. Placak, Cleveland, Chairman of the Board of Regents who was also Chairman of the Board of Examiners.

Dr. Myron August, Cleveland, Ohio.
 Dr. Morris Belmont, Youngstown, Ohio.
 Dr. Mitchell M. Benedict, Yonkers, New York.
 Dr. William F. Bennett, Verona, New Jersey.
 Dr. Sidney Brownstone, Clear Lake, Iowa.
 Dr. Martin Castellano, Verona, New Jersey.
 Dr. Homer H. Cherry, Paterson, New Jersey.
 Dr. Theodore R. Dayton, Wallingford, Conn.
 Dr. Walter A. Foreman, Brookville, Indiana.
 Dr. John V. Foster, Jr., Harrisburg, Pa.
 Dr. Harry Fredd, Brooklyn, New York.
 Dr. John S. Gaynor, Wheeling, West Virginia.
 Dr. C. J. Golinvaux, Monroe, Michigan.
 Dr. Maurice D. Kenler, New Bedford, Mass.
 Dr. Charles E. Kiessling, Newark, New Jersey.
 Dr. Robert L. Klupt, Brooklyn, New York.
 Dr. Swen L. Larson, Elmira, New York.
 Dr. Henry E. Mehmert, Chicago, Illinois.
 Dr. Charles A. Seelig, New York, New York.
 Dr. Stanley N. Shaffer, Forest Hills, New York.
 Dr. Wiley R. Smith, Knoxville, Tennessee.
 Dr. Clarence S. Thomas, Nashville, Tennessee.
 Dr. Judah Zizmor, New York, New York.

RESOLUTIONS

The following Resolutions were unanimously adopted at the Annual Meeting of the College held at Atlantic City June 6-8, 1942:

WHEREAS the Board of Regents and the House of Governors in annual session on June 6, 1942, convened at the Dennis Hotel, Atlantic City, New Jersey, unanimously adopted the Report of the Committee on Revised Constitution and

WHEREAS these revised By-Laws provide for the creation of a certifying board and qualifications for chest specialists,

BE IT RESOLVED: That all Fellows in good standing of the American College of Chest Physicians as of this date be declared as chest specialists and so to be certified by the Board of Regents and the House of Governors.

RESOLVED that the American College of Chest Physicians strongly urge the Selective Service System to amend its present regulations so that provision can be made for the Induction and Examining Centers of the various corps areas to transmit at regular intervals x-ray chest films, fully identified, on all rejectees found to have pulmonary tuberculosis, direct to the respective state health departments for immediate attention in order that isolation and treatment may be provided, when indicated, for individual rejectees before contact is lost and while control of the disease is still possible.

GOOD NEIGHBOR POLICY EXEMPLIFIED

The College was honored this year by the following physicians from various Latin-American countries who attended the Annual Sessions held at Atlantic City, June 6-8, 1942.

Argentina

Dr. Alvaro Bence, Buenos Aires

Dr. Jose Gomez, Buenos Aires

Dr. Carlos M. Quinteros, Cordoba

Cuba

Dr. Antonio Navarrete, Havana

Mexico

Dr. Donato G. Alarcon, Dr. Manuel Alonso, Dr. Miguel Jimenez, Dr. Fernando Katz, Dr. Roche Oradio Lozano, Dr. Jose Raynal, Dr. Fernando Rebora, Mexico City.

1943 DIRECTORY OF COLLEGE

The Board of Regents passed a resolution to change the name of the directory of the College from "PNEUMOTHORAX DIRECTORY" to "ROSTER OF MEMBERS OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS". Physicians who are qualified and equipped to administer artificial pneumothorax, as well as those physicians who are qualified thoracic surgeons, bronchoscopists, roentgenologists, etc., will be indicated by special markings in the directory. Members of the College who desire to make additional changes in their listings should send this information to the executive offices of the College at Chicago promptly.

College Chapter News

MISSOURI CHAPTER HOLDS ANNUAL MEETING

The annual meeting of the Missouri Chapter of the American College of Chest Physicians was held at Kansas City, April 27, 1942. An x-ray conference was attended by approximately 50 physicians. Dr. H. I. Spector, Regent of the College for the district, presided at this conference.

After the x-ray conference, the members of the chapter held a short business session and the following officers were elected: Dr. Paul Murphy, Koch, formerly Secretary-Treasurer, elected as President; Dr. Sam Snider, Kansas City, Vice-President; and Dr. J. A. Stocker, Mt. Vernon, Secretary-Treasurer.

SOUTH CAROLINA ORGANIZES CHAPTER

At a meeting held at Columbia, South Carolina, on May 19th, in connection with the annual meeting of the South Carolina Medical Society, a Chapter of the American College of Chest Physicians was organized. Dr. Leo Hall, State Sanatorium, State Park, Governor of the College for South Carolina, was elected as the first president of the Chapter. Dr. R. Kyle Brown, Superintendent of the Greenville County Sanatorium, Greenville, was elected Vice-President and Dr. B. L. Chipley, State Sanatorium, State Park, was elected Secretary-Treasurer. Meetings are to be held every quarter at different places in the state and also with the regular State Medical Society meetings.

NEW ENGLAND CHAPTER OF COLLEGE ORGANIZED

The New England Chapter of the American College of Chest Physicians was organized at the Harvard Club, Boston, on May 18th. This new chapter of the College became Chapter No. 13. The meeting was convened by Dr. Moses J. Stone, Boston, Regent for District No. 1, following an executive meeting of the Governors of the College representing the six states in the district. The business session of the chapter was called to order following a dinner and the constitution and by-laws for the chapter were read and adopted. Dr. Lyman R. Morse, Governor of the College for Connecticut, reported for the nominating committee and brought in the following recommendations: Dr. Robert B. Kerr, New Hampshire, President; Dr. Richard H. Overholt, Massachusetts, Vice-President, and Dr. U. E. Zambarano, Rhode Island, Secretary-Treasurer. The recommendations of the nominating committee were accepted and the above officers were unanimously elected to serve for the first year. An assessment of \$1.00 per year for dues was voted in order to defray the cost of operating the chapter. The New England Chapter of the College will meet annually at the time of the Massachusetts Postgraduate Assembly at Boston and a scientific program on diseases of the chest will be presented. Physicians desiring to participate in the program should communicate with Dr. U. E. Zambarano, Wallum Lake, Rhode Island.

Following the business meeting, a joint session was held with members of the American Psychiatric Association, who were meeting in annual session at Boston. Dr. A. A. Leonidoff, Poughkeepsie, New York, a Fellow of the College, presented a paper on "The Problems and Difficulties in Treating Tuberculosis Among Mentally Ill Patients." The discussion on this paper was opened by Dr. M. Gene Black of Boston.

Murray Kornfeld, Chicago, Executive Secretary of the College, addressed the assembly on "The Chest Specialist and the War Effort." Dr. Moses J. Stone presided and the following Governors of the College were present at the meeting: Dr. Edward A. Greco, Maine; Dr. Roscoe Avery, Vermont; Dr. Robert B. Kerr, New Hampshire; Dr. Frank H. Washburn, Massachusetts; Dr. U. E. Zam-

barano, Rhode Island; and Dr. Lyman R. Morse, Connecticut. The officers of the chapter will apply to the Board of Regents of the College for a District Charter.

DR. WILLNER APPOINTED SECRETARY NEW JERSEY CHAPTER

Dr. Irving Willner, Newark, was appointed Secretary-Treasurer of the New Jersey Chapter of the College by Dr. Joseph R. Morrow, President, to replace Dr. Paul K. Bornstein, Belmar, who has been called for military service. The next meeting of the Chapter has been scheduled to be held at the Bergen Pines Sanatorium, Ridgewood, in the Fall of the year.

ILLINOIS CHAPTER HOLDS BUSINESS MEETING

The Illinois State Chapter of the College held a business meeting at the Leland Hotel, Springfield, May 19, 1942. The following officers were elected for the coming year: President, Dr. Hugh A. Beam, Moline; Vice-President, Dr. Minas Joannides, Chicago; and Secretary-Treasurer, Dr. Darrell H. Trumpe, Springfield. These officers were unanimously elected.

Dr. Julius B. Novak, Chairman of the Program Committee, reported that all of the officers of the seven sections of the Illinois State Medical Society had been contacted regarding presentation of papers on some aspect of diseases of the chest in their respective sections. Three of the sections responded favorably, namely, Section on Radiology, "The Value of Miniature Chest Films," Dr. Arthur S. Webb, Glen Ellyn; discussion opened by Dr. Darrell H. Trumpe, Springfield. Section on Obstetrics and Gynecology, "The Tuberculous Obstetric Patient," Dr. Fred M. Meixner, Peoria. Section on Eye, Ear, Nose and Throat, "The Larynx, Tracheobronchial Tree and Esophagus in Kodachrome," Dr. Paul H. Holinger, Chicago.

Dr. Hugh A. Beam was inducted into office as President, and introduced Dr. Paul H. Holinger, Chicago, who presented a moving picture in kodachrome, "Bronchial Obstruction as Visualized by Bronchoscopic Cinematography." This presentation was most instructive and very well received by all those present.

TEXAS CHAPTER HOLDS ANNUAL MEETING

The Texas Chapter of the American College of Chest Physicians held its annual meeting at the Rice Hotel, Houston, May 11, 1942. An excellent scientific program was presented and the following officers were elected for the ensuing year: Dr. J. B. McKnight, Sanatorium, President; Dr. Alvis E. Greer, Houston, First Vice-President; Dr. Charles J. Koerth, San Antonio, Second Vice-President; and Dr. Robert G. McCorkle, San Antonio, Secretary-Treasurer.

The guest speaker of the evening was Dr. Ralph C. Matson, Portland, Oregon, Editor of *Diseases of the Chest*, who presented an interesting paper on "Thoracoscopy in the Diagnosis and Management of Intrathoracic Tumors."

The meeting was well attended not only by a large delegation of members of the College, but by many other physicians who manifested their interest in tuberculosis and other diseases of the chest. A vote of thanks was given to the Program and Arrangements Committees for their efforts in making this a successful meeting.

NEW YORK STATE CHAPTER ELECTS OFFICERS

The New York State Chapter of the American College of Chest Physicians held its annual meeting at the Hotel Dennis, Atlantic City, June 8th. Dr. Jas. S. Edlin, New York City, Vice-President of the Chapter last year, was elected President. Dr. Arthur Q. Penta, Schenectady, who served as Secretary-Treasurer of the Chapter for the past two years, was elected Vice-President, and Dr. Lyman I. Thayer, Glens Falls, was elected Secretary-Treasurer.

Dr. Nelson W. Strohm, Buffalo, the retiring President of the chapter, was elected as Governor of the College for New York State. The chapter is planning a mid-winter meeting at New York City and will hold its next annual session in connection with the annual meeting of the New York State Medical Society.

MICHIGAN CHAPTER MEETS

The Spring Meeting of the Michigan Chapter of the American College of Chest Phy-

sicians was held at the Statler Hotel, Detroit, on May 20, 1942. The following program was presented: "Cancer of the Lung (General Considerations)," by Norman E. Clark, M.D., Detroit; "Diagnostic Importance of Pleural Effusions in Cancer of the Lung," by William P. Chester, M.D., Detroit; and "Bronchoscopic Aids in Diagnosis of Cancer," by John R. Birch, M.D., Detroit. Following a general discussion, Dr. William A. Hudson, Detroit, Governor of the College for Michigan, presented the chapter with their charter.

Following dinner at 6:30 P. M., a round table discussion was had with Dr. William A. Hudson presiding. At this time Kenneth A. Wood, M.D., Detroit, gave a paper on the "Anatomy of the Tracheobronchial Tree," and Arthur S. Kimball, M.D., Pontiac, sent in a paper on "Variations of the Phrenic Nerve" which was presented by David S. Brachman, M.D., of Detroit.

News Notes

Dr. B. L. Chipley, for the past twelve years Senior Resident at Valley View Sanatorium, Paterson, New Jersey, has accepted a position at State Sanatorium, State Park, South Carolina. Dr. Chipley is a Fellow of the College and was instrumental in organizing the recent Chapter in South Carolina. He was elected as Secretary-Treasurer of this Chapter.

Dr. Leo Hall of State Sanatorium, State Park, South Carolina, Chief of Staff, recently read a paper before the Columbia Medical Society which held its meeting at State Park. The paper was on Pneumoconiosis, and slides and x-rays were demonstrated. Dr. Hall is a Fellow of the College, Governor for the State of South Carolina and President of the newly-organized South Carolina Chapter.

Dr. R. Kyle Brown, Superintendent of the Greenville County Sanatorium, Greenville, South Carolina, read a paper on The Diagnosis of Pulmonary Tuberculosis before the Greenville County Medical Society at the last meeting of this society. Dr. Brown is a Fellow of the College and Vice-President of the recently-organized South Carolina Chapter.

Members of the American College of Chest Physicians in Active Service

RESERVE ARMY OFFICERS

- Banquer, Jacob E., Lieut. Col., Fort Andrews, Mass. (Mail addressed to 130 Woodcliffe Road, Newton Highlands, Mass.)
- Harwood, Bruno S., Major, U. S. Army Recruiting Station, Raleigh, N. C.
- Heaton, Thomas G., Major, R. C. A. M. C., 152 Shirley St., Halifax, N. S., Canada.
- Hulsey, Simeon H., Major, 1007 Medical Arts Building, Fort Worth, Texas (Stationed at Camp Wolters, Texas).
- Knoepp, Louis F., Major, Medical Corps, Fort Benning, Georgia.
- Spalding, William C., Major, Station Hospital, Fort Rosecrans, California.
- *Ackerman, Frederick F., Captain, Station Hospital, Fort Douglas, Utah.
- *Ayers, Lloyd R., Captain, Station Hospital, Kelly Field, Texas.
- *Berke, Robert D., Captain, 303rd C. A. B. B. Bn., APO No. 309, Fort Lewis, Washington.
- *Hanahan, Ralph Bailey, Captain, Station Hospital, Camp Stewart, Georgia.
- Hellweg, Charles E., Captain, Station Hospital, Williams Field, Chandler, Arizona.
- Holmes, Arthur E., Captain, Station Hospital, Camp Lee, Virginia.
- Joress, Mark H., Captain, 7th Station Hospital, Camp Edwards, Massachusetts.
- *LaFratta, Carl W., Captain, Fort Belvoir, Virginia (Mail addressed to 1630 West Grace St., Richmond, Virginia).
- Lustok, Mischa J., Captain, School of Med. Dept. Technicians, Wm. Beaumont General Hospital, El Paso, Texas.
- Mellies, Chester J., Cheyenne, Wyoming, Captain (Mail addressed to Missouri State San., Mt. Vernon, Missouri).
- *Miller, Samuel E., Captain, Station Hospital, Camp Shelby, Mississippi.
- Passalacqua, Luis A., Captain, P. O. Box 1948, Ponce, Puerto Rico.
- Pratt, Lawrence A., Captain, Lawson General Hospital, Atlanta, Georgia.
- *Rogers, Galen A., Captain, Fitzsimmons General Hospital, Denver, Colorado.
- *Simpson, Neill, Captain, Station Hospital, Lubbock Flying School, Lubbock, Texas.
- Smith, Leslie B., Captain, Camp Wolters, Texas (Address mail to 113 Russell, Weatherford, Texas).
- *Solomon, Saul, Captain, Fort Dix, New Jersey (Address mail to 162 West 54th St., New York, New York).
- Stelman, Henry H., Captain, Camp Stewart, Georgia (Address mail to 742 Fillmore Ave., Buffalo, New York).
- Thayer, Kent H., Captain, Fitzsimmons General Hospital, Denver, Colorado.
- Theodos, Peter A., Captain, 38th General Hospital, Camp Bowie, Texas.
- Tsoulos, George D., Captain, Station Hospital, Fort Custer, Michigan.
- Van Deventer, Wm. C., Captain, Med. Dept., Det. 250th C. A., APO 939, Seattle, Washington.
- Warner, Allan H., Captain, Station Hospital, Fort Dix, New Jersey.
- *Webster, LuVerne J., Captain, 2630 S. 10th Street, Abilene, Texas.
- Bohorfoush, Joseph G., 1st Lieut., Station Hospital, Basic Flying School, San Angelo, Texas.
- *Bradley, Frank L., 1st Lieut., Station Hospital, Camp Hulen, Texas.
- *Chernoff, Arthur H., 1st Lieut., 182 Infantry Med. Detach., Camp Edwards, Massachusetts.
- Exley, David W., 1st Lieut.—Formerly at Fort Jackson, S. C.—No known address at present time.
- Fishbein, Elliott, 1st Lieut., Med. Det. 18th Inf., Camp Blanding, Florida.
- *Gerson, Charles E., 1st Lieut., Station Hospital, Fort Leonard Wood, Missouri.
- *Gordon, Nathan G., 1st Lieut., Army Examining Station, Fort Barrancas, Florida.
- *Idstrom, Linneus G., 1st Lieut., Station Hospital, Camp Crowder, Missouri.
- Lichtenberg, Walter, 1st Lieut., Fort Niagara, New York.
- *Moore, Bert E., 1st Lieut., Station Hospital, Camp Davis, North Carolina.
- *Moran, James B., 1st Lieut., C. O. Co. H. 113th Med. Reg., Camp Blanding, Florida.
- *Price, Henkel M., 1st Lieut., Station Hospital, 1318th Service Unit, Camp Pickett, Virginia.
- Putman, James H., 1st Lieut., 47th Inf. 9th Div., Fort Bragg, North Carolina.
- *Robbins, Eric P., 1st Lieut., Station Hospital, Camp Claiborne, Louisiana.
- *Roman, Paul W., 1st Lieut., APO No. 833, Trinidad, B. W. I., Surgeon, USAT, Columbia.
- Samson, Paul C., 1st Lieut., Hoff General Hospital, Santa Barbara, California.
- *Schwartzman, Joel J., 1st Lieut., Medical Corps, Camp Swift, Texas.
- *Silverglade, Alexander, 1st Lieut., CASC 1952, Station Hospital, Fort Rosecrans, California.
- Tennant, Raymond E., 1st Lieut., Fort Lewis, Washington (Address mail to 7038 50th N. E., Seattle, Washington).
- *Van Der Schouw, Harold M., 1st Lieut., 1625 Olive St., Denver, Colorado.
- Wirth, Herman E., 1st Lieut., 1503 Emmons Ave., Brooklyn, New York.
- Wolpaw, Sidney E., 1st Lieut., Billings General Hospital, Fort Benjamin Harrison, Indiana.
- Young, Richard W., 1st Lieut., Station Hospital, Barksdale Field, Louisiana.

RANK NOT KNOWN

- Applebaum, Irving L., Tilton General Hospital, Fort Dix, New Jersey.
- Benedict, Mitchell M., Signal Corps Laboratory, Fort Monmouth, New Jersey.
- Myers, Dan Wilbur, 319 University Club Building, St. Louis, Missouri.
- *Reiss, Jack, 307 Med. Bn. 82 Div., Camp, Claiborne, Louisiana.

*Associate Members.

WANTED: RESIDENCY IN TUBERCULOSIS

Age 33, male, good physical condition; Guatemala Medical School; exempt from the draft; interested in Thoracic Surgery; has had one and one-half years of experience in the United States. Available at once. Address: "El Progreso Medico," 2787 Hudson County Boulevard, Jersey City, New Jersey.